REMARKS/ARGUMENTS

Applicants extend thanks to Examiner Rojas for the courtesy of a telephone interview on March 19, 2007. The pending claims were discussed, as was the patent to Blumenau, though no agreement was reached. In the discussion, the Examiner noted Blumenau's mention of a mount point directory and volume identifier. Based on that discussion, Applicants are filing this Amendment After Final for entry, in accordance with the accompanying Request for Continued Examination (RCE).

Claims 10-12 and 21-25 are pending. This amendment is submitted in response to the Office Action mailed December 20, 2006 designated final. In the pending Office Action, claims 10-12 and 21 were rejected under 35 U.S.C. § 103(a) for allegedly being obvious in view of Shoroff et al. (U.S. Pat. No. 6,023,744) in view of Blumenau (U.S. Pat. No. 6,631,442) and further in view of Igami et al. (U.S. Pat. No. 6,622,223). The rejected independent claims (claims 10, 11, 12, 21) have been amended. It is submitted that entry of the amendments will result in patentably distinguishable claims. Entry of this amendment and further examination of this application, as amended, are requested.

In the Office Action, the Examiner asserted that Shoroff shows detecting when remaining storage area has become less than a predetermined value, and cited Blumenau for mounting a remote volume for use by a local storage system in accordance with size and specification parameters, when such mounting is physically possible. As noted, Applicants assert that Blumenau does not make up for the shortcomings of Shoroff for responding to a detected deficiency in storage area by mounting a remote volume.

Blumenau relates to reconfiguration of mounted volumes. The system of Blumenau (see Figs. 1, 2) involves associating identifiers for data volumes 110, 111, 112, 113 in a storage system 100 for access by a host system 150, 151, 152 connected through a channel director 102. Blumenau provides volumes within a storage system for access, in response to requests from a host computer system (col. 6, lines 32-49; col. 10, lines 57-65).

In contrast, the claimed invention relates to a remote storage system that provides a remote storage area to a storage system following a utilization demand message from the

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storage system to the remote storage system. That is, communications are specified between a storage system and remote storage system, not between a storage system and a host. Moreover, neither Blumenau nor Shoroff mentions or suggests a utilization demand message that is sent from a storage system to a remote storage system, wherein the utilization demand message specifies size and speed of the remote storage area to be used by the storage system. In addition, Blumenau's mount point directory does not suggest the claimed port ID, because a mount point refers to a mounted volume, whereas a port exists whether or not a volume is mounted, and is the mechanism through which a volume is accessed.

Upon entry of this amendment, all the independent claims will recite that the size and speed for the remote storage are specified in a utilization demand message from the storage system to the remote storage system that identifies a predetermined port ID of the storage system. This is described, for example, in the specification at page 7, line 11 through page 8, line 5. None of the cited art, taken alone or in combination, provides such features.

The amended independent claims also recite that, where providing the requested storage is possible, the remote storage system sends a data packet to the client storage system, the data packet identifying a remote unit ID of the remote storage area that is to be stored in a port management table of the storage system in accordance with the port ID of the storage system and thereby mounting said remote storage area and providing said remote storage area having said size and said speed as the storage area for said storage system. This is described, for example, in the specification at page 8, lines 6-25 and page 7, lines 4-10.

Therefore, it is asserted that the proposed combination of Shoroff and Blumenau and Igami in the Office Action does not support the prima facie case for obviousness with respect to the claims as amended.

First, under M.P.E.P. § 2143, obviousness requires a suggestion or motivation for combining the references. There is no such suggestion or motivation, because Shoroff relates to freeing storage space allocated to a particular file, Blumenau relates to dynamic updating of mounted volumes, and whereas Igami relates to buffer operations for temporary data storage (see the respective Abstracts of these documents). There is no suggestion or motivation for combining such disparate technologies, absent hindsight reconstruction upon viewing the

pending claims. There also is no reasonable expectation of success for the combination (the second criterion required under M.P.E.P. § 2143 for obviousness), because the documents are unrelated, in that Shoroff creates storage space for a file, Blumenau updates mounted volumes, and Igami stores data in buffers. Lastly, the proposed combination would not teach or suggest all the limitations of claims 10-12 and 21-25 because, if the three documents could somehow be combined, they still would not provide a storage method operation as described:

> wherein a size and a speed of at least one of reading and writing of said remote storage area to be utilized are specified in a utilization demand message from said storage system to said remote storage system that identifies a predetermined port ID of the storage system

and would not provide a storage method operation as described:

> wherein said remote storage system determines if said remote storage area can be provided in accordance with said size and speed, and if it is possible, sends a data packet from the remote storage system to the storage system, said data packet identifying a remote unit ID of the remote storage area that is to be stored in a port management table of the storage system in accordance with the port ID identified in the utilization demand message and thereby mounting said remote storage area and providing said remote storage area having said size and said speed as the storage area for said storage system.

These limitations are recited in claim 10, as amended. The amendments to each of the other independent claims include similar limitations.

Thus, it is asserted that the amendments to the independent claims (10, 11, 12, 21, 22), upon entry, will place all the pending claims 10-12, 21-25 in condition for allowance.

CONCLUSION

In view of the foregoing, Applicants request entry of this amendment and assert that the claims, as amended, will be in condition for allowance, and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 858-350-6100.

Respectfully submitted,

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